

this admirable contrivance gives to one whose problem includes night after night the provision for work in halls of many dimensions. But besides having to carry screens of different sizes, the operator needed heretofore three or four pairs of objectives of different powers, a matter of great expense, besides the cumbersome task of packing and unpacking several sets of glasses.

The multifocal attachment not only dispenses with the burden and expense of additional objectives, but also furnishes a picture more nearly PERFECT than the best combination gives without it, never disturbing the equilibrium of the system of lenses, but adding new powers of definition with entire freedom from distortion of lines and color dispersion.

This attachment can be furnished in three graded powers to suit different objectives.

A varying size of picture on the same screen is sometimes desirable. When a portrait or statue is to be shown, it might be desirable to have it relatively larger or smaller than the scale

of the landscape views. To effect this formerly required a change of objectives and an unpleasant interruption; but with the new attachment the statue may be shown life-size or colossal, and a portrait can be reduced to precisely the best size for life-like presentation.

The phantasmagoria effect with the MULTIFOCAL ATTACHMENT is now possible without moving the lantern backward or forward. Simply by increasing the distance of the multifocal system, the picture can be reduced to a disc of light of a few inches diameter, and slowly or rapidly enlarged to cover the whole screen. In scientific demonstrations the operator sometimes needs a sharpened pencil of light or a parallel beam. Such wants are readily met by this wonder-working improvement. All workers with the lantern should know about it, as they will appreciate what can be accomplished with it in covering all perplexities in the distance and size of picture on the screen.

See advertisement in another column.—*Communicated.*

CALENDAR.

Biological Society, Washington.

April 16.—C. W. Stiles, Notes on Parasites: *Tænia ovilla* in its Relation to Blanchard's Classification; F. V. Coville, The Flora of the High Sierras of California, New Plants from California, Nevada, and Utah; Erwin F. Smith, A Review of Baillon's Botanical Dictionary; J. N. Rose, Mexican Leguminosæ with Notes on Dr. Palmer's Collection.

Society of Natural History, Boston.

April 20.—John Murray, Some Recent Investigations into the Physical and Biological Conditions of the Locks and Fjords of the West of Scotland; E. Adams Hartwell, An Elevated Pot-Hole at Fitchburg, Mass.; George H. Barton, Additional Notes on the Drumlins of Massachusetts.

Exhaustion

Horsford's Acid Phosphate.

A wonderful remedy, of the highest value in mental and nervous exhaustion.

Overworked men and women, the nervous, weak and debilitated, will find in the Acid Phosphate a most agreeable, grateful and harmless stimulant, giving renewed strength and vigor to the entire system.

Dr. Edwin F. Vose, Portland, Me., says: "I have used it in my own case when suffering from nervous exhaustion, with gratifying results. I have prescribed it for many of the various forms of nervous debility, and it has never failed to do good."

Descriptive pamphlet free.

Rumford Chemical Works, Providence, R. I.

Beware of Substitutes and Imitations.

CAUTION.—Be sure the word "Horsford's" is on the label. All others are spurious. Never sold in bulk.

THE WEEKLY BULLETIN

OF NEWSPAPER AND PERIODICAL LITERATURE.

Catalogues and Classifies Each Week
THE PRINCIPAL CONTENTS OF THE PERIODICAL PRESS.

That huge mass of material heretofore inaccessible to the eager student is now rendered available. Special attention is invited to the Bulletin's

INDEX OF TECHNICAL LITERATURE

Send for a free sample copy and learn how

The Bulletin Supplies

The Articles Catalogued.

Address **THE WEEKLY BULLETIN,**
5 Somerset Street, - - Boston, Mass.

OF WHAT USE IS THAT PLANT?

You can find the answer in

SMITH'S "DICTIONARY OF ECONOMIC PLANTS."

Sent postpaid on receipt of \$2.80. Publisher's price, \$3.50.

SCIENCE BOOK AGENCY,
874 Broadway, New York.

ESTERBROOK'S STEEL PENS.

OF SUPERIOR AND STANDARD QUALITY.
Leading Nos.: 048, 14, 130, 135, 239, 333
For Sale by all Stationers.

THE ESTERBROOK STEEL PEN CO.,
Works: Camden, N. J. 26 John St., New York.

THE LATEST IMPROVEMENT
FOR STEREOPTICONS. OUR PATENT.
MULTI-FOCAL
ATTACHMENT.
PRODUCES PICTURES FROM 12 TO 20 FEET AT
ANY DISTANCE WITHOUT CHANGING THE OBJECTIVE
SEND FOR
DESCRIPTIVE CIRCULAR TO **QUEEN & CO. PHILA.**

THE CHEAPEST AND BEST
PHOTO ENGRAVING CO.
67 PARK PLACE, NEW YORK
ENGRAVING FOR ALL ILLUSTRATIVE AND
ADVERTISING PURPOSES

1,200 PAGES FOR \$1.00

Is what the Publishers of **THE AMERICAN QUEEN** are giving their subscribers.

This interesting Magazine, which is published monthly in Bridgeport, Conn., gives one hundred pages of solid literature each month including illustrated articles on travel, historical and biographical reviews of prominent men and places, startling stories of real and adventurous life, etc. Special departments devoted to the household, fashion, book reviews, literature, scientific discoveries, facts and fancies, people of note, correspondence, etc. Its fashion department is illustrated with cuts of the latest fashion and is conducted by one of the most eminent authorities in America. American Queen Publishing Co., Bridgeport, Conn. Subscription \$1.00 per year, 50 cents, 6 months, or send postal note for 25 cents or 30 cents in stamps for 3 months' trial.

PATENTS

For INVENTORS. 40-page BOOK FREE. Address **W. T. Fitzgerald, Attorney at Law, Washington, D.C.**

GEM OPALS. Cut ready for setting. Having purchased a large lot at the Mexican locality, we are offering them at about one-fifth jewelers' prices; 50c., \$1., \$1.50, \$2., \$3. This is a rare opportunity to secure a fine gem very cheap. 100 pp. Mineral Catalogue 15c., in cloth 25c., Supplement 2c. **GEO. L. ENGLISH & Co.,** Mineralogists, 733 and 735 Broadway, New York City.

METAL, MARBLE, AND MOSAIC WORK.

MEMORIAL TABLETS

of any description erected in Schools, Colleges, Libraries, Chapels, Churches and Public Buildings. Send for illustrated hand-book.

J. & R. LAMB, 59 Carmine St., N. Y.



DRY GOODS, ETC.

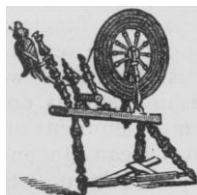
*Arnold,
Constable & Co.*

MEN'S SPRING WOOLENS

HOMESPUN AND CHEVIOT SUITINGS.

English, Scotch and Irish
Manufacture.**DRESS CLOTHS,****FANCY CASSIMERES,
OVERCOATINGS.****LADIES'****Tweed, Homespun & Mixed Suitings**

Scotch and English Checks and Stripes.

DIAGONALS AND SERGES.*Broadway & 19th St.***NEW YORK.****The Fifth Avenue Linen Store.**

Our stock of Housekeeping Linen Goods is the most complete in America. We deal with manufacturers only, and keep nothing but pure linen. Our patrons can always rely upon getting the best makes of Table Linen, Napkins, Towels, Handkerchiefs, etc., at the very lowest price. A fine *all linen* initial Handkerchief, in both ladies' and men's sizes, at \$3.00 dozen. Extra large hemstitched Huck Towels, \$3.00 dozen. Hand hemstitched linen Sheets, \$5.00 a pair. Pillow Cases to match at \$1.00 a pair. We always have the latest novelties in linen table decorations. A visit to our store does not incur any obligation to buy.

WM. S. KINSEY & CO.,

Near 36th St.

386 Fifth Avenue.

R. H. MACY & CO.

6TH AVE., 13TH TO 14TH ST., N. Y.

SINCE MOVING INTO NEW
BUILDINGwe have added 75,000 square feet to our
floor area, therebyGREATLY ENLARGING ALL DE-
PARTMENTS.**OUR SPRING AND SUMMER
CATALOGUE,**the most complete of its kind ever issued, of 315 illus-
trated pages.WILL BE ISSUED ABOUT APRIL 15TH
and mailed free to any address outside the city.

FINANCIAL.

*New Method of Protecting Property
from Lightning.***The Lightning Dispeller.**

Price, \$20 to \$30.—According to size.

The Patent Lightning Dispeller is a conductor specially designed to dissipate the energy of a lightning discharge,—to prevent its doing harm,—placing something in its path upon which its capacity for causing damage may be expended.

No recorded case of lightning stroke has yet been cited against the principle of the Dispeller. So far as known, the dissipation of a conductor has invariably protected under the conditions employed.

Correspondence solicited.

AGENTS WANTED.

The American Lightning Protection Company

United Bank Building, Sioux City, Iowa.

**TACOMA INVESTMENTS
FOR NON-RESIDENTS.
TAYLOR & GUNSTON**

Take full charge of property for the

EASTERN INVESTOR.

City, Town, and Suburban Lots,

Garden, Fruit, Hop and Timber Lands.

Address 504 California Bl'k, Tacoma, Wash.

**TACOMA SOUTH BEND
PUGET CITY INVESTMENTS**

I GUARANTEE 12 per cent per annum in any of the above cities. I have made from **40 to 50 per cent. per annum** for non-residents. I also make first mortgage, improved real estate loans on unquestionable securities from 8 to 10 per cent. per annum net. Also have choice bargains in **Farm, Hop, Hay and Garden Lands.** Correspondence Solicited regarding Western Washington. All inquiries answered promptly. Address

A. C. SICKELS, Tacoma, Washington.**QUERY.**

Can any reader of *Science* cite a case of lightning stroke in which the dissipation of a small conductor (one-sixteenth of an inch in diameter, say,) has failed to protect between two horizontal planes passing through its upper and lower ends respectively? Plenty of cases have been found which show that when the conductor is dissipated the building is not injured to the extent explained (for many of these see volumes of Philosophical Transactions at the time when lightning was attracting the attention of the Royal Society), but not an exception is yet known, although this query has been published far and wide among electricians.

First inserted June 19. No response to date.

N. D. C. HODGES,**874 BROADWAY, NEW YORK.****SCIENCE****The Illustrated Popular Science Weekly.****TENTH YEAR.**

More than Two hundred of the leading scientific men and women of America have agreed to contribute to the paper during the coming year; and, as others are constantly joining in this move, to make the paper more valuable than ever, it cannot be long before there will be a body of five hundred competent users of this weekly medium of scientific discussion.

Send 50 cents, in postage stamps if most convenient, for 2 months' trial subscription.

N. D. C. HODGES,**874 Broadway, - - - NEW YORK.**